Vol. 40, pp. 49–50 June 30, 1927

PROCEEDINGS

OF THE

BIOLOGICAL SOCIETY OF WASHINGTON

A NEW HYMENOTHRIX FROM ARIZONA

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A large collection of Asteraceae made in Arizona in 1925–6 by Dr. T. H. Kearney and his associates has recently been identified by the writer. Among other rarities it contains two species, *Laphamia gilensis* Jones and *Perityle ciliata* (L. H. Dewey) Rydb., which have hitherto been known only from the type collections, and in addition a new species of *Hymenothrix* which appears to be of hybrid origin. It may be known as

Hymenothrix loomisii, Blake, sp. nov.

Annual (?), about 0.5 m. high; stem slender, erect-branched, greenish-white, striate, finely incurved-puberulous throughout; leaves alternate throughout; petioles naked, incurved-puberulous, 1–2 cm. long; blades broadly triangular in outline, 1–8 cm. long, the lower usually biternate (the primary lateral lobes often only 2-parted, or with the terminal sometimes 5-parted), the upper ternate, the segments linear to linear-oblanceolate, subacutely callous-pointed, entire, usually 1.2–2.5 cm. long, 0.8–2 (–4) mm. wide, thick, pale green, incurved-puberulous, obscurely glandular, not punctate; upper leaves smaller, those of the inflorescence mostly reduced to small linear bracts; heads several or numerous, discoid, about 27-flowered, in rounded or flattish cymose panicles, on slender pedicels 0.4–2 cm. long; involucre turbinate, 4–6 mm. high, 2-seriate, equal or subequal, the principal phyllaries about 10, oblong, broadly rounded or subtruncate, thin, greenish below, yellowish above or somewhat purplish-tinged, with whitish subscarious margin, 1-ribbed and about 6-nerved, thinly incurved-puberulous, short-ciliate, erose above, 2–2.8 mm. wide, the proper phyllaries subtended by 2 or 3 similar linear bracts about two-thirds as long; corollas whitish, densely stipitate-glandular on tube, papillose toward tip of teeth, zygomorphic (teeth in 3 lengths, 1 much longer than the others), 5.3–6.5 mm. long (tube 2–2.5 mm., throat funnelform, 1.6–2 mm. long, teeth 1–2 mm. long); achenes narrowly cuneate, 4-angled, multistriate, hirsute, 3–5 mm. long, 1 mm. wide; pappus of 13–15 equal 1-seriate linear-lanceolate paleae 4–6 mm. long, scarious-margined below, the strong costa hispidulous throughout and more or less abruptly excurrent as an awn about 2 mm. long.

Arizona: Peach Springs, 15 Sept. 1883, *Rusby* 647; Camp Verde to

Prescott, Aug. 1896, *B. E. Fernow;* fields, Oak Creek, Oct. 1903, *Purpus* 8296; Ashfork, Yavapai Co., 19 Sept. 1926, *Harold F. Loomis* 3241 (type no. 1,285,420, U. S. Nat. Herb.).

This plant of western Arizona is intermediate between *Hymenothrix wislizeni* A. Gray and *H. wrightii* A. Gray. The foliage and pubescence are those of *H. wislizeni,* while the discoid heads, the involucre, the corolla color, the achenes, and the pappus are those of *H. wrightii.* In the depth of lobing of the disk corollas and in the character of the style tips, *H. loomisii* is intermediate between the other two species. Its anthers contain abundant pollen grains. In Purpus' specimen the achenes show a well-developed embryo; in all the others the embryos are abortive. The blending of characters shown by *H. loomisii* is such as to leave little room for doubt that it is of hybrid origin, while its collection at several localities in the same general region (in which both the supposed parents occur), during a period of over forty years, suggests that it may now be fixed in character. It is hoped that during the coming year fresh seeds can be obtained and the behavior of the plant studied.

In his treatment of the Helenieae in the "North American Flora," Rydberg[1] restricted the name *Hymenothrix* to *H. wislizeni,* the original species, and proposed the new genus, *Trichymenia* for the other species, *H. wrightii,* chiefly on the basis of its very deeply cleft corollas. The discovery of a species completely intermediate between *H. wislizeni* and *H. wrightii,* even though it may be of hybrid origin, indicates that these differences are not of generic value and that the two species were properly included by Gray in the same genus. *Florestina,* next to which *Trichymenia* was placed by Rydberg because of its deeply cleft corollas, is fundamentally distinguished by its subulate-attenuate hispid style-appendages.

In *Hymenothrix loomisii* the corollas are decidedly zymorphic, one of the teeth being about equal to the entire part of the throat, two being about half as long, and two intermediate. The disk corollas of *H. wislizeni* are similarly but less conspicuously zygomorphic, one or sometimes two of the teeth being more deeply cleft than the others. In *H. wrightii,* also, the corollas (all of which are tubular) are zygomorphic, three of the teeth being cut nearly to the apex of the tube, while the remaining two are connate for one-third to more than half their length, the greater degree of connation occurring in the central part of the head.

Zygomorphy of the disk corollas is more common in the Helenieae than is generally realized. For instance, in Rydberg's treatment of the tribe there is no indication of its occurrence, except in *Hymenothrix* and *Trichymenia,* in the 7 genera constituting his subtribe Hymenopappanae.[2] In the Synoptical Flora, Gray mentions it (among the genera referred to) only in *Hymenothrix,* which includes Rydberg's genus *Trichymenia.* Examination by the writer of material of various species taken almost at random has shown the occurrence of zygomorphy of varying degree in the disk corollas of one or more species in all of the 7 genera recognized by Rydberg except the aberrant *Leucampyx,* where there appears to be no trace of it.

[1] N. Amer. Fl. 34:55. 1914.

[2] N. Amer. Fl. 34:43–58. 1914.